

# Notice of Allowability

Application No.

10/800,203

Examiner

John Chavis

Applicant(s)

VAN DER HOEVEN, STEVEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to papers filed 10/25/07.
2. ☒ The allowed claim(s) is/are 1-55.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

JOHN CHAVIS

PRIMARY EXAMINER

TECHNOLOGY CENTER 2100

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ari Akmal on 11/9/07.

An amendment to the claims is listed below:

#### IN THE CLAIMS:

The claims are in the format as required by 35 C.F.R. § 1.121.

1. (Currently Amended) A method for efficient ~~multilingual~~ text input, comprising:  
formulating a plurality of candidates based on a prefix and an input, wherein each the candidate comprises a set of symbols and a score, the score calculated based upon one of a plurality of or more symbols associated with the input and the prefix, and the set of symbols associated with the candidate corresponds to the prefix and the one of the plurality of symbols associated with the input;  
formulating a set of predictions based on the set of symbols associated with the candidate with a first highest score, wherein the prediction comprises one or more predictive completions associated with the set of symbols of the candidate and each of the set of predictions is associated with a score;  
formulating a proposition based on the candidate or the prediction; and  
presenting the proposition to a user.
2. (Original) The method of claim 1, wherein the prefix is empty, entered by a user, or a previous proposition.

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3. (Original) The method of claim 1, wherein the score of the candidate is based on a score of the prefix concatenated with the input.
4. (Original) The method of claim 3, wherein the score of the candidate is based on a score of the input combined with the score of the prefix.
5. (Original) The method of claim 4, wherein the candidate is one of a set of candidates where the score of each of the candidates in the set is above a threshold.
6. (Original) The method of claim 5, wherein formulating a candidate further comprises ranking the set of candidates based upon the score of each of the candidates.
7. (Original) The method of claim 6, wherein formulating a candidate is based on a language model.
8. (Original) The method of claim 7, wherein the score of the candidate is based on a string which is the longest string in the language model which is an extension of the prefix.
9. (Original) The method of claim 1, wherein the prediction is one of a set of predictions.
10. (Original) The method of claim 9, wherein formulating a prediction is based on a usage model.
11. (Original) The method of claim 10, wherein each of the set of predictions is a sequence corresponding to a path through a tree starting from a node based on the candidate and ending with a terminal node.

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12. (Original) The method of claim 11, wherein formulating a prediction comprises scoring each of the predictions based on frequency of appearance, length of the path through the tree, or the candidate.
13. (Original) The method of claim 9, further comprising determining a set of synonyms for the prediction.
14. (Original) The method of claim 13, wherein the set of synonyms is based on the terminal node of the prediction in the tree.
15. (Original) The method of claim 14, wherein the set of synonyms is stored in the terminal node.
16. (Original) The method of claim 14, further comprising scoring each of the set of synonyms based on a score of the prediction and the score of the candidate on which each synonym is based.
17. (Original) The method of claim 16, further comprising ranking the set of synonyms.
18. (Original) The method of claim 17, further comprising storing the set of synonyms, the set of predictions and a set of candidates, wherein the set synonyms, the set of candidates, and the set of predictions are ranked.
19. (Currently Amended) A computer readable medium having code for efficient multilingual-text input, wherein the code is embodied within computer readable medium, the code comprising instructions translatable for:  
formulating a plurality of candidates based on a prefix and an input, wherein each the candidate comprises a set of symbols and a score, the score calculated based upon one of a plurality of or more symbols associated with the input and the prefix, and the

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set of symbols associated with the candidate corresponds to the prefix and the one of the plurality of symbols associated with the input;

formulating a set of predictions based on the set of symbols associated with the candidate with a first highest score, wherein the prediction comprises one or more predictive completions associated with the set of symbols of the candidate and each of the set of predictions is associated with a score;

formulating a proposition based on the candidate or the prediction; and  
presenting the proposition to a user.

20. (Original) The computer readable medium of claim 19, wherein the prefix is empty, entered by a user, or a previous proposition.

21. (Original) The computer readable medium of claim 19, wherein the score of the candidate is based on a score of the prefix concatenated with the input.

22. (Original) The computer readable medium of claim 21, wherein the score of the candidate is based on a score of the input combined with the score of the prefix.

23. (Original) The computer readable medium of claim 22, wherein the candidate is one of a set of candidates where the score of each of the candidates in the set is above a threshold.

24. (Original) The computer readable medium of claim 23, wherein formulating a candidate further comprises ranking the set of candidates based upon the score of each of the candidates.

25. (Original) The computer readable medium of claim 24, wherein formulating a candidate is based on a language model.

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26. (Original) The computer readable medium of claim 25, wherein the score of the candidate is based on a string which is the longest string in the language model which is a extension of the prefix.
27. (Original) The computer readable medium of claim 19, wherein the prediction is one of a set of predictions.
28. (Original) The computer readable medium of claim 27, wherein formulating a prediction is based on a usage model.
29. (Original) The computer readable medium of claim 28, wherein each of the set of predictions is a sequence corresponding to a path through a tree starting from a node based on the candidate and ending with a terminal node.
30. (Original) The computer readable medium of claim 29, wherein formulating a prediction comprises scoring each of the predictions based on frequency of appearance, length of the path through the tree, or the candidate.
31. (Original) The computer readable medium of claim 27, further comprising instructions for determining a set of synonyms for the prediction.
32. (Original) The computer readable medium of claim 31, wherein the set of synonyms is based on the terminal node of the prediction in the tree.
33. (Original) The computer readable medium of claim 32, wherein the set of synonyms is stored in the terminal node.
34. (Original) The computer readable medium of claim 32, further comprising instructions for scoring each of the set of synonyms based on a score of the prediction and the score of the candidate on which each synonym is based.

35. (Original) The computer readable medium of claim 34, further comprising instructions for ranking the set of synonyms.

36. (Original) The computer readable medium of claim 35, further comprising instructions for storing the set of synonyms, the set of predictions and a set of candidates, wherein the set of synonyms, the set of candidates, and the set of predictions are ranked.

37. (Currently Amended) A system for efficient multilingual text input, comprising:  
a device comprising:  
an input means comprising a set of zones, each zone associated with a plurality of symbols; and  
a processor operable to execute instructions on a computer readable medium,  
the instruction operable for:  
formulating a plurality of candidates based on a prefix and an input associated with one of the set of zones, wherein each the candidate comprises a set of symbols and a score, the score calculated based upon one of a plurality of ~~or more~~ symbols associated with the input and the prefix, and the set of symbols associated with the candidate corresponds to the prefix and the one of the plurality of symbols associated with the input;  
formulating a set of predictions based on the set of symbols associated with the candidate with a first highest score, wherein the prediction comprises one or more predictive completions associated with the set of symbols of the candidate and each of the set of predictions is associated with a score;  
formulating a proposition based on the candidate or the prediction; and  
presenting the proposition to a user.

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38. (Original) The system of claim 37, wherein the prefix is empty, entered by a user, or a previous proposition.

39. (Original) The system of claim 37, wherein the score of the candidate is based on a score of the prefix concatenated with the input.

40. (Original) The system of claim 39, wherein the score of the candidate is based on a score of the input combined with the score of the prefix.

41. (Original) The system of claim 40, wherein the candidate is one of a set of candidates where the score of each of the candidates in the set is above a threshold.

42. (Original) The system of claim 41, wherein formulating a candidate further comprises ranking the set of candidates based upon the score of each of the candidates.

43. (Original) The system of claim 42, wherein formulating a candidate is based on a language model.

44. (Original) The system of claim 43, wherein the score of the candidate is based on a string, wherein the string is the longest string in the language model which is an extension of the prefix.

45. (Original) The system of claim 37, wherein the prediction is one of a set of predictions.

46. (Original) The system of claim 45, wherein formulating a prediction is based on a usage model.



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47. (Original) The system of claim 46, wherein each of the set of predictions is a sequence corresponding to a path through a tree starting from a node based on the candidate and ending with a terminal node.

48. (Original) The system of claim 47, wherein formulating a prediction comprises scoring each of the predictions based on frequency of appearance and length of the path through the tree.

49. (Original) The system of claim 45, wherein the device is further operable for determining a set of synonyms for the prediction.

50. (Original) The system of claim 49, wherein the set of synonyms is based on the terminal node of the prediction in the tree.

51. (Original) The system of claim 50, wherein the set of synonyms is stored in the terminal node.

52. (Original) The system of claim 50, wherein the device is further operable for scoring each of the set of synonyms based on a score of the prediction and the score of the candidate on which each synonym is based.

53. (Original) The system of claim 52, wherein the device is further operable for ranking the set of synonyms.

54. (Original) The system of claim 53, wherein the device is further operable for storing the set of synonyms, the set of predictions and a set of candidates, wherein the set of synonyms, the set of candidates, and the set of predictions are ranked.

55. (Previously Presented) A method for efficient multilingual text input, comprising:

formulating a set of candidates based on a prefix and an input, wherein each candidate comprises a set of symbols and a score, the score for the candidate is calculated based upon one of a plurality of symbols associated with the input and the prefix and the set of symbols associated with the candidate corresponds to the prefix and the one of the plurality of symbols associated with the input;

determining a set of predictions based on the candidate associated with a first highest score, wherein the set of predictions comprises one or more predictive completions associated with the set of symbols of the candidate and each of the set of predictions is associated with a score;

formulating a proposition based upon the prediction with a second highest score;  
and  
presenting the proposition to a user.

***Allowable Subject Matter***

2. The following is an examiner's statement of reasons for allowance: the closest prior art references of record are the U.S. publication to Lee (2005/0044495) and the newly cited publication to Theimer (2004/0243257). However, neither reference of combination of references teach or suggest the newly added features of "formulating a plurality or a set of candidates based on a prefix and an input, wherein each candidate comprises a set of symbols and a score, the score calculated based upon one of a plurality of symbols associated with the input and the prefix, and the set of symbols associated with the candidate corresponds to the prefix and the one of the plurality of symbols associated with the input".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Chavis whose telephone number is (571) 272-3720. The examiner can normally be reached on M-F, 9:00am-5:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC



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